

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-82 (Canceled)

83. (Previously presented) A method for improving a nutritional profile of a plant, comprising the steps of:

transforming a plant cell of said plant with an expression cassette comprising a nucleic acid sequence encoding a choline metabolizing enzyme operably linked to a seed specific promoter, said plant selected from the group consisting of corn, canola, wheat, barley, oats, alfalfa, soybeans and sorghum; and

recovering a genetically altered plant from said plant cell, said genetically altered plant characterized by an improved nutritional profile relative to a wild-type of said plant.

84. (Previously presented) The method according to claim 83 wherein said choline metabolizing enzyme is choline oxidase.

85. (Previously presented) The method according to claim 84, wherein said expression cassette further comprises a nucleic acid sequence that encodes a betaine aldehyde dehydrogenase capable of converting betaine aldehyde to betaine.

86. (Currently amended) The method according to ~~any one of claims 81-83 claim 83~~, wherein said substrate is not a primary metabolite of the group selected from glucose, amino acids, common fatty acids and nucleotides.

87. (Currently amended) The method according to ~~any one of claims 81-83 claim 83~~, wherein said seed selective promoter is a phaseolin promoter or a napin promoter.

88. (Currently amended) The method according to ~~any one of claims 81-83 claim 83~~, comprising the further step of:

growing said genetically altered plant under conditions that permit the formation of seed, and recovering said seed.

89. (Currently amended) A genetically altered plant or a descendant thereof, comprising a recombinant nucleic acid molecule stably incorporated into the genome of said plant, said recombinant nucleic acid molecule comprising:

(a) a seed-specific promoter; and

(b) a nucleic acid sequence operably linked to said seed-specific promoter, said nucleic acid sequence encoding a choline metabolizing enzyme ~~an enzyme capable of modifying the utilization of an intermediate substrate in a secondary metabolic pathway associated with a nutritional profile of said plant, said enzyme not naturally occurring in said secondary metabolic pathway;~~

said plant being selected from the group consisting of corn, canola, wheat, barley, oats, alfalfa, soybeans and sorghum; and

said genetically altered plant being characterized by an improved nutritional profile relative to a wild-type of said plant;

or a cell, seed or component of said genetically altered plant or descendant thereof.

90-91. (Canceled)

92. (Currently amended) The genetically altered plant or descendant thereof according to claim 91 89, wherein said choline metabolizing enzyme is choline oxidase.

93. (Previously presented) The genetically altered plant or descendant thereof according to claim 92, wherein said recombinant nucleic acid molecule further comprises a nucleic acid sequence that encodes a betaine aldehyde dehydrogenase capable of converting betaine aldehyde to betaine.

94. (Previously presented) The genetically altered plant or descendant thereof according to claim 89, wherein said substrate is not a primary metabolite of the group selected from glucose, amino acids, common fatty acids and nucleotides.
95. (Previously presented) The genetically altered plant or descendant thereof according to claim 89, wherein said seed selective promoter is a phaseolin promoter or a napin promoter.
96. (Previously presented) The genetically altered plant or descendant thereof according to claim 89, having reduced sinapine content relative to a wild-type of said plant.
97. (Previously presented) The genetically altered plant or descendant thereof according to claim 89, having altered lignin content relative to a wild-type of said plant.
98. (Previously presented) An animal feed derived at least in part from the genetically modified plant or descendant thereof according to claim 89, or from a cell, seed or component thereof.